

Background

Smoking before, during, or after pregnancy is associated with various adverse outcomes for both mother and infant. Smoking before pregnancy can make it harder for a woman to get pregnant. During pregnancy, women who smoke have a higher risk of delivering their infant too early or with a low birth weight. These infants also have a higher risk of having certain birth defects, such as cleft lip and cleft palate. Infants whose mothers smoked during pregnancy or were exposed to second-hand smoke after birth have a higher risk of sudden infant death syndrome (SIDS). There is no safe level of tobacco use or exposure for women and infants. Therefore, the Centers for Disease Control and Prevention (CDC) recommends that women should not smoke before, during, or after pregnancy.¹

Pregnancy Risk Assessment Monitoring System (PRAMS)

PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after delivery. PRAMS surveys are typically completed two-to-six months after delivery. PRAMS data has been collected in Missouri since 2007, and included in the national estimates every subsequent year but 2008. PRAMS data are used to access progress towards Healthy People goals. The weighted response rate for Missouri PRAMS from 2013-2017 was 66.0%.

National Goals to Eliminate Tobacco Use

Healthy People 2020 Objective	Healthy People 2020 goal ²	Missouri PRAMS 2017
Increase proportion of women delivering a live birth who did not smoke prior to pregnancy	87.8%	75.8%
Increase abstinence from cigarette smoking among pregnant women	98.6%	87.0%
Reduce postpartum relapse of smoking women who quit during pregnancy	38.2%	44.1%

Cigarette Smoking Rates

PRAMS data are used to assess Missouri's progress towards achieving Healthy People 2020 smoking objectives.

PRAMS Tobacco Use Indicators	Missouri % (95% CI)*					
	2013	2014	2015	2016	2017	2013-2017
Smoked in the past 2 years	32.0 (29.0-35.1)	32.9 (29.8-36.1)	30.0 (26.9-33.2)	29.2 (26.0-32.5)	28.3 (25.2-31.4)	30.5 (29.1-31.9)
Smoked during the 3 months before pregnancy	28.3 (25.3-31.2)	30.0 (26.9-33.1)	27.1 (24.1-30.1)	26.2 (23.0-29.3)	24.2 (21.2-27.1)	27.2 (25.8-28.5)
Smoked during the last 3 months of pregnancy	15.1 (12.7-17.4)	17.6 (15.0-20.3)	15.1 (12.7-17.6)	13.5 (11.0-15.9)	13.0 (10.7-15.3)	14.9 (13.8-16.0)
Smoked after delivery [‡]	19.4 (16.8-22.0)	23.0 (20.1-25.9)	20.7 (17.9-23.4)	18.7 (15.9-21.5)	18.2 (15.5-20.8)	20.0 (18.8-21.2)

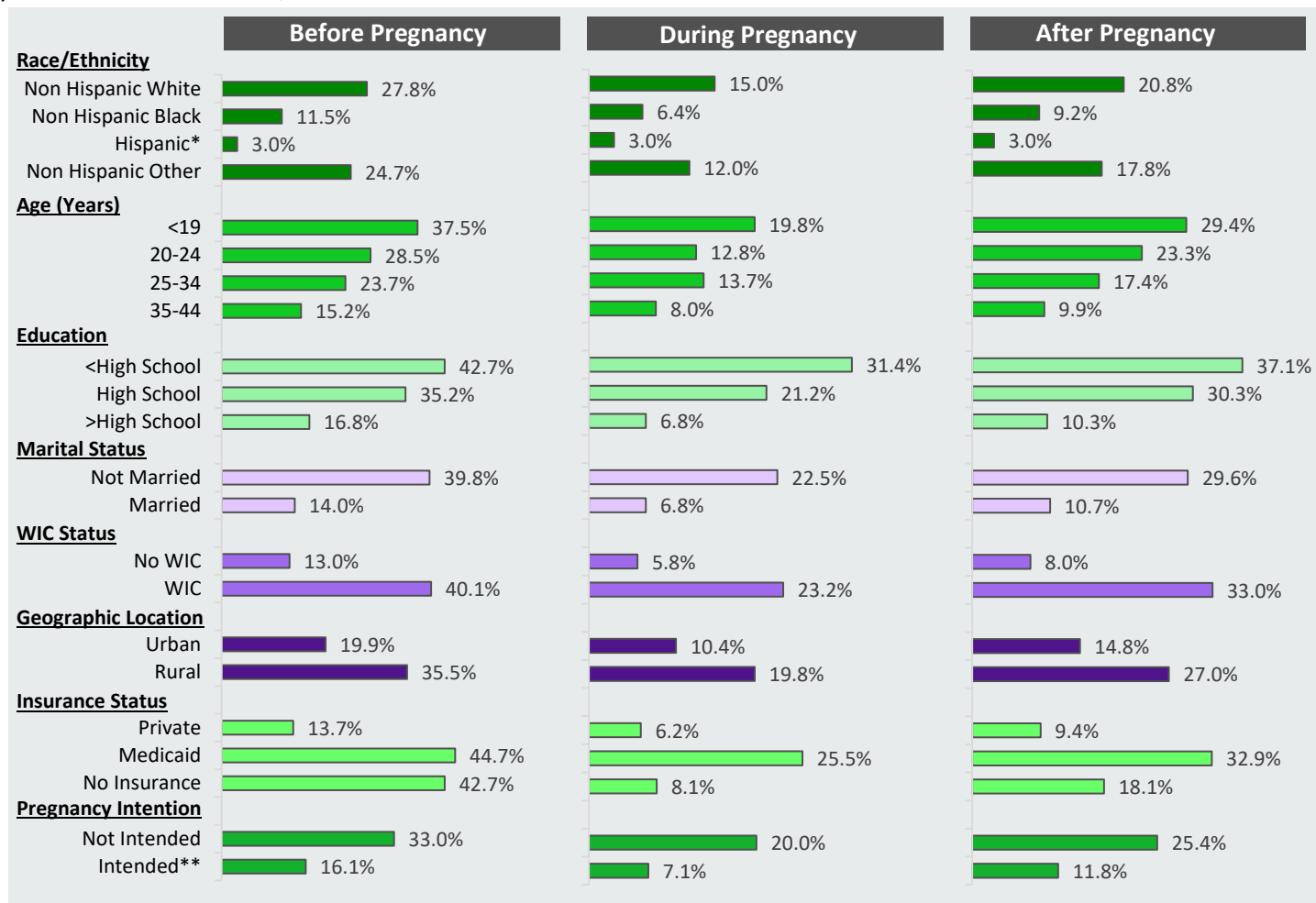
*Weighted percentage (95% confidence interval)

[‡]"After delivery" is defined as smoking at the time the PRAMS survey was completed

Missouri PRAMS: Maternal Tobacco Use

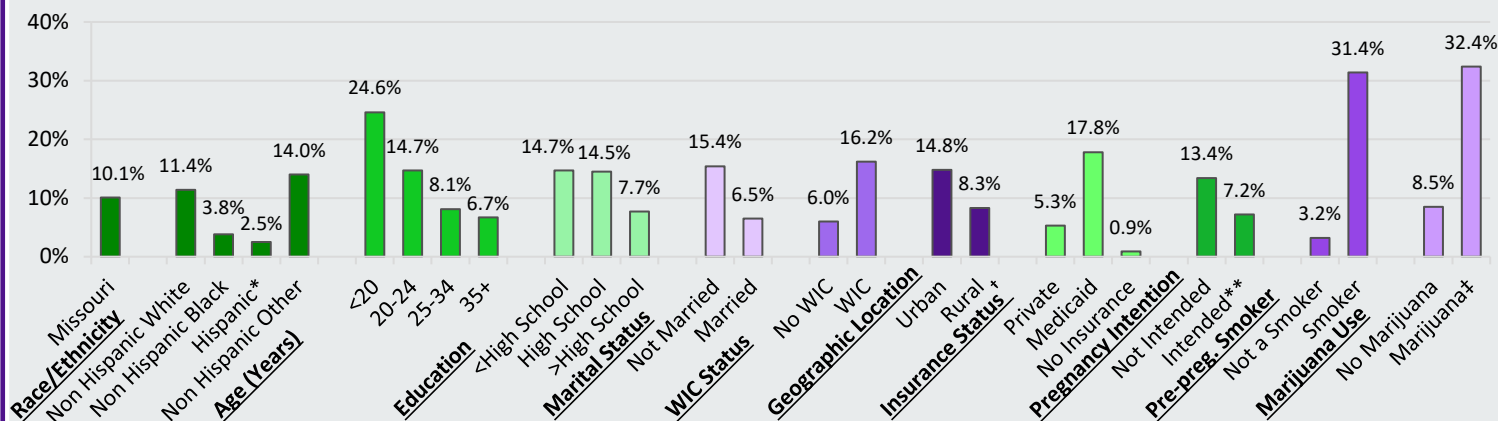
Who Smokes Cigarettes?

Women who reported smoking during the 3 months before pregnancy, in the last 3 months of pregnancy, or after delivery, by maternal characteristics, Missouri 2017



Who Uses E-Cigarettes?

Women reporting e-cigarette use during the past 2 years by maternal characteristics, Missouri 2017



*<60 respondents, rate may not be reliable

** Intended pregnancy is defined as the mother wanting to be pregnant now or sooner

† Prenatal Insurance status

‡ Marijuana use is defined as women who used marijuana during pregnancy

Missouri PRAMS: Maternal Tobacco Use

Tobacco Use by Income

Income is collected as a part of the PRAMS survey. Recent mothers were asked how much money their household made, before taxes, within the last 12 months and how many depended on the income. Poverty level is defined by Federal Poverty Levels (FPL), which are based on annual income and the number of persons in the household. “Low income” is defined as a household income below 200% of poverty level. “Poor” income is defined as a household income below 100% of poverty level. In 2017, the FPL for a family of 4 was \$24,600.

Income (% of federal poverty level) by tobacco use indicators before and after pregnancy, Missouri 2017

PRAMS Tobacco Use Indicator	Less than 100% (\$)	100-199% (\$\$)	200-299% (\$\$\$)	300% or more (\$\$\$\$)	All Incomes
Tobacco product use before pregnancy	41.9 (35.8-48.0)	26.1 (19.3-32.9)	15.4 (8.8-21.9)	8.4 (4.9-11.8)	25.1 (22.1-28.1)
Cigarette smoking before pregnancy	41.1 (35.1-47.2)	24.5 (17.9-31.1)	14.5 (8.0-21.0)	7.5 (4.2-10.8)	24.2 (21.2-27.1)
E-cigarette use before pregnancy	9.5 (5.9-13.2)	6.8 (2.9-10.7)	2.2 (0.6-4.8)	2.9 (0.7-5.1)	5.9 (4.3-7.5)
Tobacco product use during pregnancy	27.0 (21.6-32.4)	12.8 (7.8-17.9)	8.7 (3.7-13.6)	1.7 (0.1-3.3)	13.6 (11.3-16.0)
Cigarette smoking during pregnancy	26.0 (20.7-31.4)	12.1 (7.2-17.0)	8.5 (3.6-13.5)	1.3 (0.0-2.7)	13.0 (10.7-15.3)
E-cigarette use during pregnancy	2.5 (0.7-4.2)	1.6 (0.0-3.4)	0.2 (0.0-0.6)	0.4 (0.0-1.2)	1.4 (0.6-2.1)

What PRAMS Mothers Say about Smoking

“...though I cut back on cigarettes I did not completely quit. However when I was happily married I still had a miscarriage at 11 weeks, and I was down to 1 cigarette a day.”

“I strongly believe that any mother who chooses to smoke cigarettes or use any kind of nicotine during pregnancy should be prosecuted. They are endangering an unborn child's well-being and it is wrong!”

“I quit smoking cigarettes the day that I found out I was pregnant. It will [soon] be a year smoke free.”

-- PRAMS mothers, 2016-2017

Missouri PRAMS: Maternal Tobacco Use

Summary

- Based on the comparison between the Healthy People 2020 goals and Missouri's current smoking rates, Missouri still has areas for improvement in regards to decreasing maternal smoking behaviors.
- In 2017, about one in four (24.2%) of PRAMS respondents reported smoking cigarettes in the 3 months before becoming pregnant, and over one in eight (13.0%) reported smoking during the last 3 months of pregnancy.
- Over the last 5 years, over one in seven (14.2%) of PRAMS respondents reported smoking during the last 3 months of pregnancy. The prevalence of 2017 PRAMS respondents who reported smoking cigarettes after delivery (18.2%) decreased slightly when compared to 2013 findings (19.4%).
- Mothers who did not graduate high school, were not married, were on WIC or Medicaid, who were in a rural county, or who had an unintended pregnancy were more likely to smoke during pregnancy.
- E-cigarette use is becoming more common, with one in ten (10.1%) of PRAMS respondents reporting e-cigarette use within the 2 years before becoming pregnant. In 2017, women who smoked before becoming pregnant or women who used marijuana during pregnancy were more likely to use e-cigarettes. This might indicate that these women were attempting to stop smoking cigarettes by utilizing other nicotine or engaging in alternative smoking behaviors.
- Women that were in lower-income households were significantly more likely to smoke cigarettes before and during pregnancy than those in higher-income households.

Resources

Smokefree Women: <https://women.smokefree.gov>

Smokefree: <https://smokefree.gov/>

The Community Guide: <https://www.thecommunityguide.org/topic/tobacco>

Tips From Former Smokers: <https://www.cdc.gov/tobacco/campaign/tips/partners/health/hcp/index.html>

Centers for Disease Control and Prevention: <http://www.cdc.gov/prams>

Missouri PRAMS: <https://health.mo.gov/data/prams/index.php>

Missouri Tobacco and Smoking: <https://health.mo.gov/living/wellness/tobacco/smokingandtobacco/index.php>

References:

¹ 50 Years of Progress: A Report of the Surgeon General: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf

² Healthy People 2020 Objectives: <https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives>

To learn more about PRAMS methods and to see data availability by state and year visit: <https://www.cdc.gov/prams>

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